NASEO
National Association of State Energy Officials

National Standard Practice Manual

2026 Edition – Overview and Update

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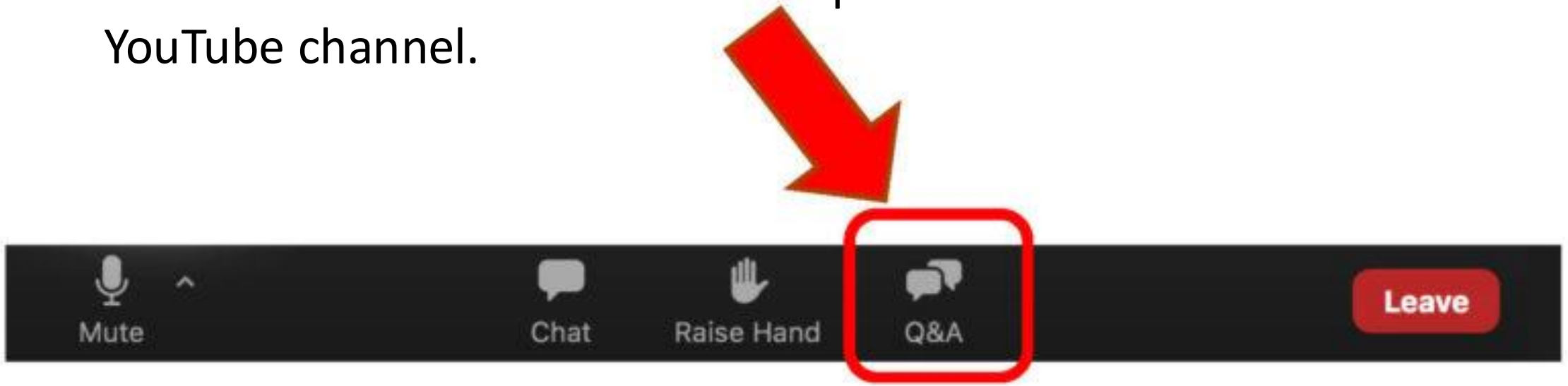
Webinar Logistics

- All participants are muted
- If you have a question, please click on the “Q&A” button at the bottom of your screen. You may need to “hover” or click on your screen in order for that option to appear.
- The webinar will be recorded and posted on NASEO’s website and YouTube channel.



About NASEO

- The only national non-profit association for the governor-designated energy officials from each of the 56 states and territories
- Serves as a resource for and about the State Energy Offices through topical committees, regional dialogues, and informational events that facilitate peer learning, best practice sharing, and consensus building
- Advances the interests of the State and Territory Energy Offices before Congress and the Administration
- Learn more at www.naseo.org

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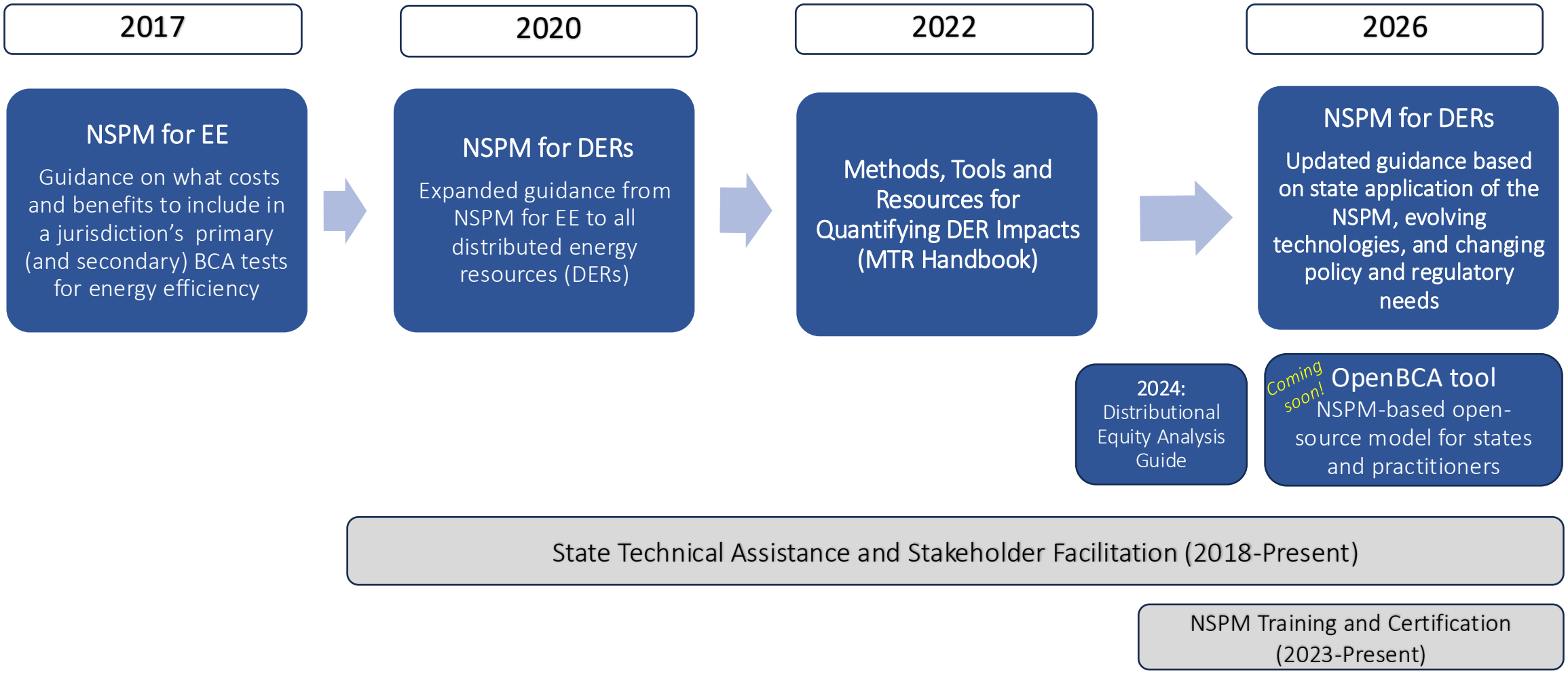
Agenda

1. National Energy Screening Project (NESP) and NSPM Background
2. NSPM Use and Application
3. NSPM 2026 Edition - Key Guidance and Updates
4. Supporting Resources and Tools

NASEO's NESP-related Products and Services

For more information, visit
www.naseo.org/topics/nesp

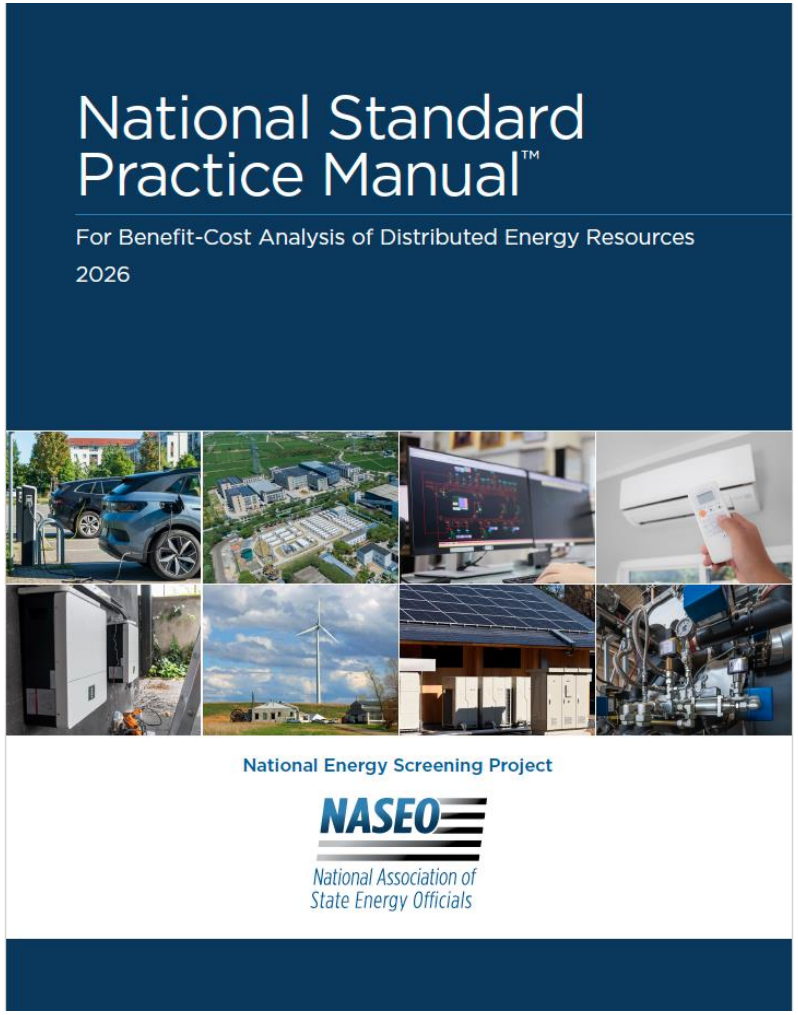
NSPM Evolution and Supporting Resources



NSPM Guidance

National Standard Practice Manual

- ***National Standard Practice Manual for Benefit Cost Analysis of Distributed Energy Resources*** (2026)
  - Expands upon guidance from the 2020 edition of the NSPM
  - Developed to improve cost-effectiveness testing for all DERs
  - Builds on the CA Standard Practice Manual
- NESP companion documents to the NSPM:
  - *Methods, Tools and Resources: A Handbook for Quantifying DER Impacts for Benefit-Cost Analysis* (MTR handbook)
  - BCA Case Studies
  - Forthcoming OpenBCA tool

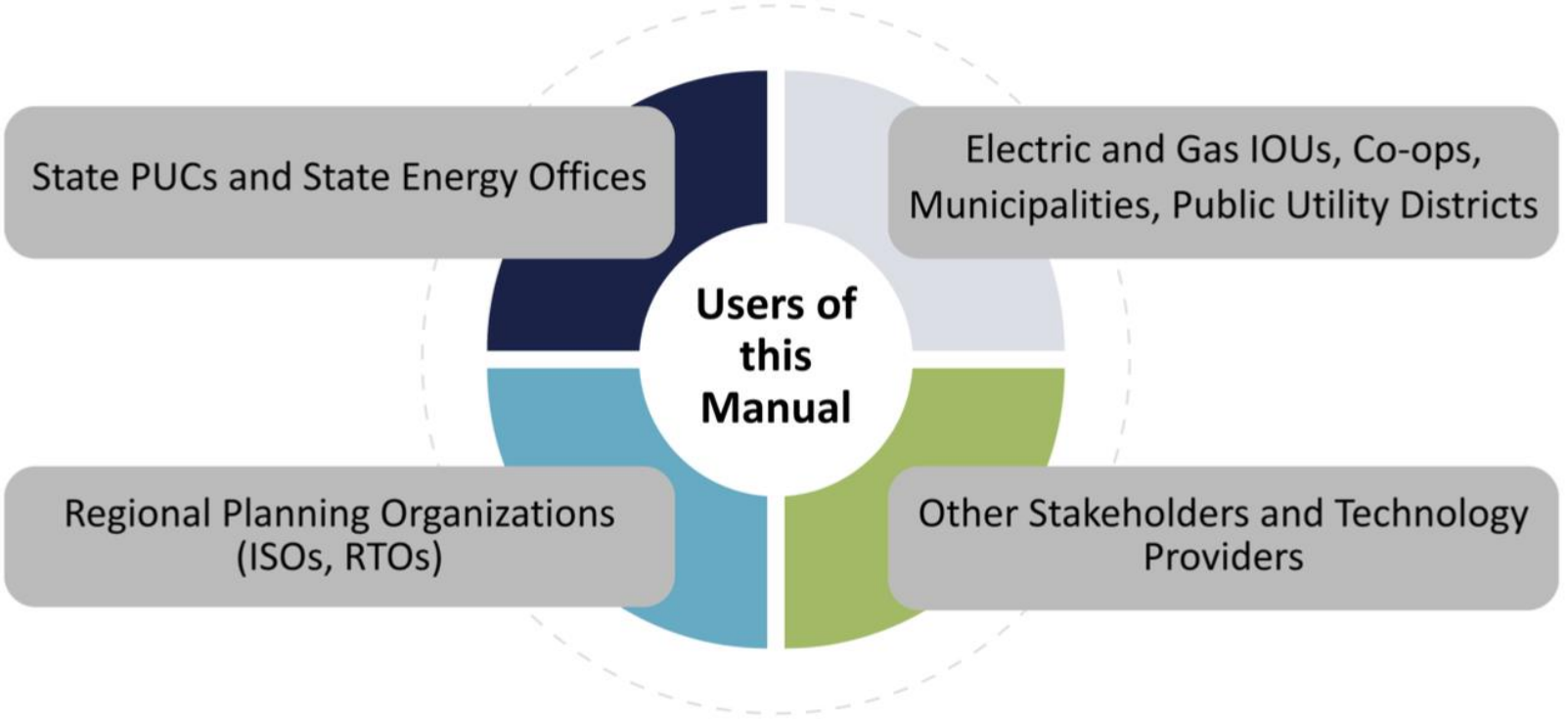


Visit www.naseo.org/topics/nesp

Intended NSPM Users

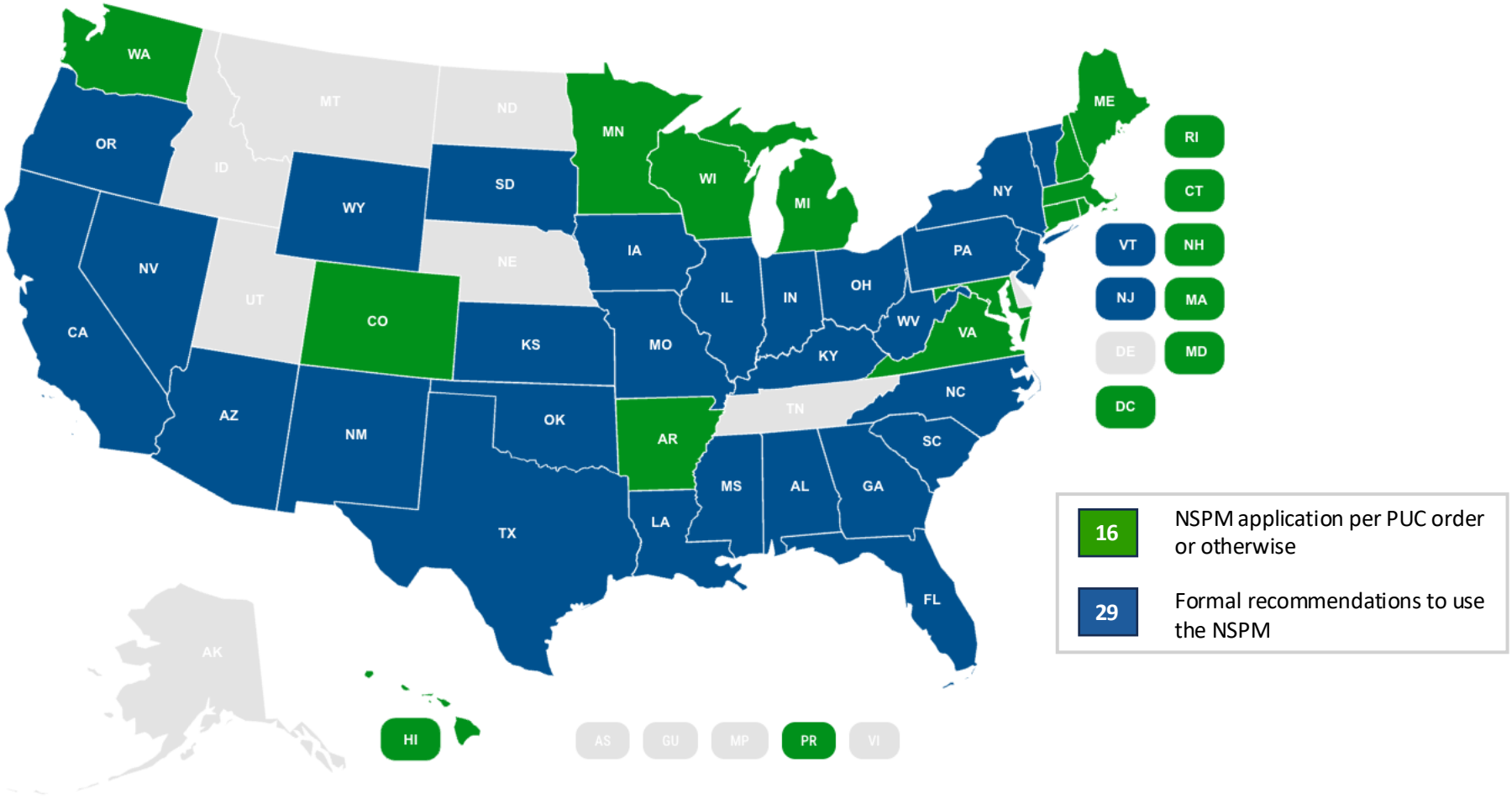
- The NSPM focuses on BCA guidance in the context of utility DER programs; however, the principles and concepts apply broadly to a range of other contexts

- Intended users of the NSPM include a variety of stakeholders that have a role guiding or reviewing DER investment decision-making



NSPM References and Application

2026



For examples of state case studies and applications, go to www.naseo.org/topics/nesp

What is Benefit-cost Analysis (BCA)?

BCAs assess the cost-effectiveness of DER investments by comparing the benefits and costs of alternative resources over the life of the proposed DER.

Reference case without DER

vs.

DER Case with DER

Benefit-Cost Ratio (BCR)

$$BCR = \frac{PV \sum \text{benefits (\$)}}{PV \sum \text{costs (\$)}}$$

DER is cost-effective if BCR > 1.0

Net Benefits

$$\text{Net Benefits} = \sum PV \text{ benefits (\$)} - \sum PV \text{ costs (\$)}$$

DER is cost-effective if Net Benefits > 0

Discount rates are used to calculate the present values of streams of costs and benefits over time.

NSPM 2026 Edition - Table of Contents

Chapters

Appendices

NSPM 2026 Edition – Key Guidance and Updates…

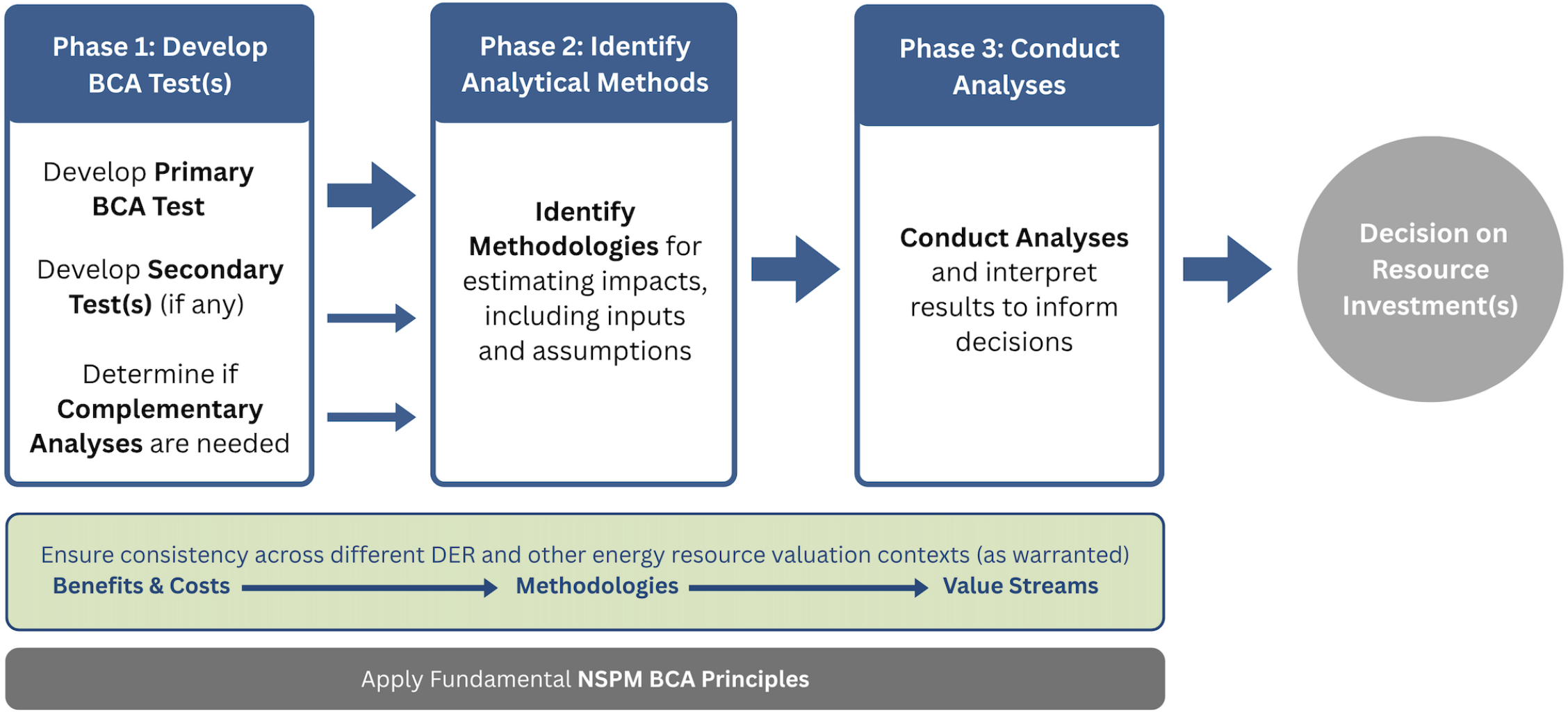
(Note: Numbering does not correspond with NSPM chapters)

1	BCA role in **broad decision framework** for DER resource investments, covering three phases.
2	**NSPM BCA principles -** economically sound, policy- and technology-neutral foundational guidance.
3	**Consistent DER valuation** across programs, procurement, pricing, infrastructure, state policy, and planning contexts.
4	NSPM multi-step process for **developing a primary BCA test,** any secondary test(s), and addressing key BCA parameters.
5	DER-specific guidance, including **applicability/materiality of impacts** and accounting for **interactive effects** across DER types.
6	Guidance on **grid and demand flexibility** in BCAs as a cross-cutting issue across different DERs and DER-specific scenarios.

NSPM 2026 Edition – Key Guidance/Updates, cont.

7	Accounting for **reliability and resilience** in BCAs**.**
8	Accounting for **uncertainty and risk** in BCAs
9	BCA for **DER-specific scenarios**: virtual power plants, multi-DERs onsite, non-wires/non-pipe solutions, and microgrids.
10	Guidance on **selecting discount rates** to apply in BCAs.
11	**Quantifying DER impacts**, referencing *MTR Handbook* resources for detail.
12	**New/expanded appendices**: Economic Development & Jobs; Distributional Equity; Geographic Boundaries; BCA Assessment Levels; Accounting for Transfers in BCAs.

NSPM BCA Decision Framework

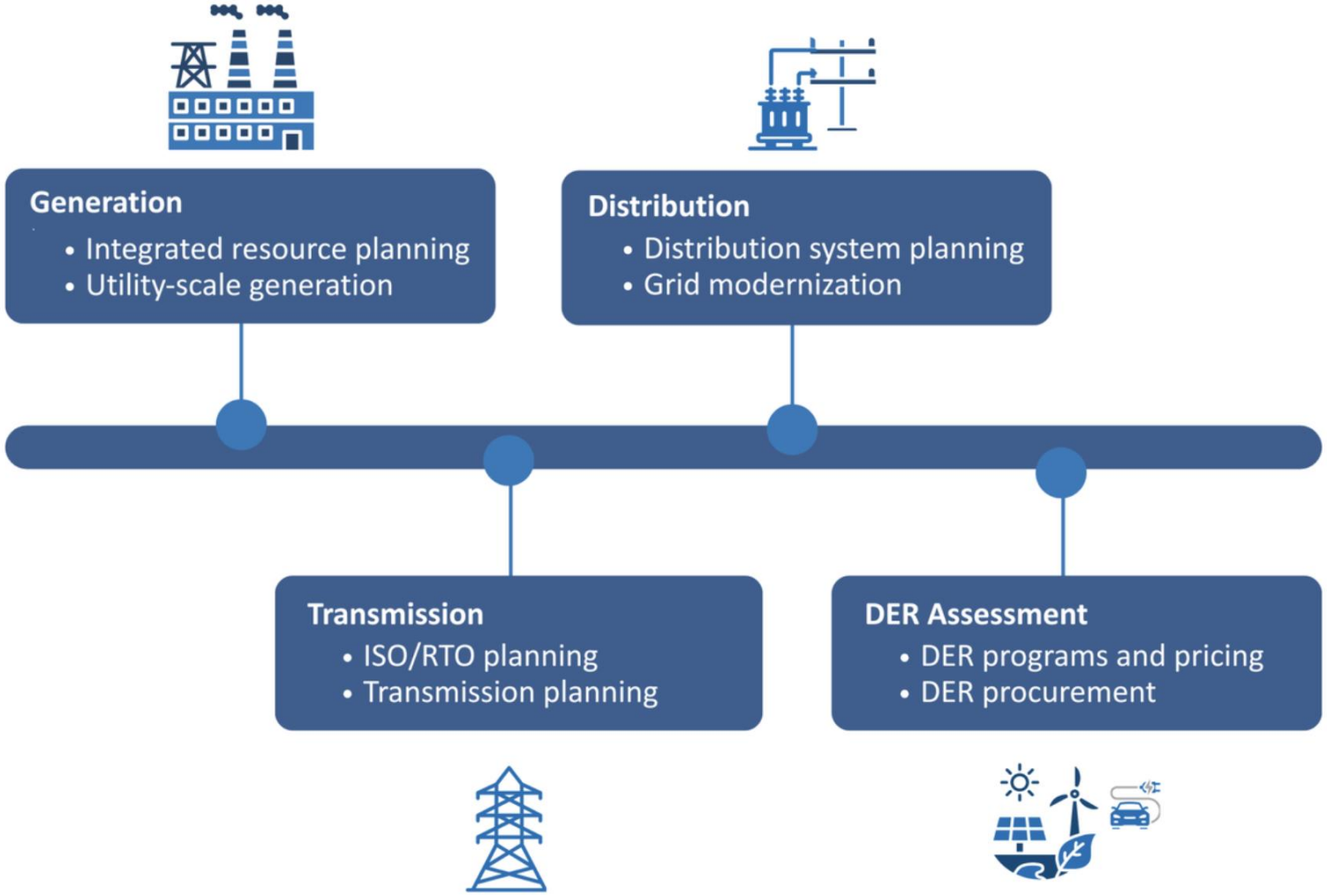


NSPM BCA Principles

Principle 1	Align with Applicable Energy Policy Goals
Principle 2	Treat DERS as a Utility System Resource
Principle 3	Account for All Relevant and Material Impacts
Principle 4	Ensure Symmetry in the Treatment of Benefits and Costs
Principle 5	Conduct Forward-Looking, Long-Term, Incremental Analyses
Principle 6	Avoid Double-Counting Impacts
Principle 7	Conduct BCAs Separately from Other Complementary Analyses
Principle 8	Ensure Transparency

Consistent DER Valuation Across Different Contexts

Applying consistent BCA principles, methods, and assumptions for valuing DERs and other resources helps to ensure ensure that all resource investments are optimized relative to each other



Source: Adapted from NASEO/NARUC Task Force on Comprehensive Electricity Planning

Valuing Energy Resources in Different Contexts

Context	Example Questions to be Answered
DER programs	Should there be an investment in the DER program? Can DER programs be designed to increase net benefits?
Utility scale generation	Is the generation resource necessary, and will it meet public needs at lower cost than alternatives?
Resource procurements	What is the maximum amount that should be paid (i.e., ceiling price) to procure the resource?
Energy price signals	What price signal will optimize customer demand profiles and the adoption of DER?
Grid modernization	Should the grid modernization investment be made?
Dynamic system planning	Which portfolio of large-scale and distributed energy resources will provide the greatest benefits?
Retrospective prudence reviews	Was the capital investment in question expected to provide net benefits to customers at the time it was made?
Performance incentive mechanisms (PIMs)	How much should a utility be rewarded or penalized, based on the benefits or costs experienced?
State energy policies, planning and programs	Will the state's policies, planning, and program efforts help to meet its specific energy goals and objectives by providing net benefits to the state?

Applying the NSPM principles and concepts across a range of contexts improves the consistency of valuing DERs and other resources, offering several advantages:

- **Economic decision-making**
- **Applicable policies**
- **Stakeholder input**
- **Administrative efficiency**

Addressing Affordability Alongside BCAs
Conducting Rate and Bill Impact Analyses (RBAs)

- BCAs and RBAs answer different, but complementary questions regarding DER investments
- Attempting to address these questions into a single analysis (e.g., RIM test) fails to adequately address either cost-effectiveness or magnitude of rate and bill impacts.
    - RIM test can be used as a threshold screen to determine whether an RBA is needed

Benefit-Cost Analysis vs. Rate and Bill Impact Analysis

	Benefit-Cost Analysis (BCA)	Rate and Bill Impact Analysis (RBA)
Question Answered	Will total costs across all customers increase (net costs) or decrease (net benefits) because of an investment?	Will electricity (or natural gas) rates go up or down and by how much, and what are the bill impacts for program participants and non-participants)?
Impacts Analyzed	• Utility system costs • Other non-utility costs of state policy interest	• Reduced or increased utility revenues • Change in utility system costs • Participation in programs
Example Metrics	• Present value of change in costs ($) • Present value of change in benefits ($) • Present value of net benefits ($) • Benefit-cost ratio	• Rate Impacts (c/kWh, %) • Bill Impacts ($/month, %) • Participation (#, %)

Addressing Affordability Alongside BCAs cont.
Conducting Rate and Bill Impact Analyses (RBAs)

- Presenting BCA and RBA results alongside each other helps provide a broader framework for decision-making in resource investments

- Can consider short-term rate impacts, but long-term rate impacts are more meaningful.

Comparison of BCA and RBA Results – Hypothetical Energy Efficiency Portfolio

Analysis	Impact	Result
Benefit-Cost Analysis	Net Benefits (mil PV$)	385
	Benefit-Cost Ratio	2.1
Rate Impact Analysis	Long-Term Rate Impacts (%)	1.3
	Bill Impacts Non-Participants (%)	1.2
	Bill Impacts Participants (%)	-3.4
	Participation Rate (%) Participation Low-Income (%)	48 56

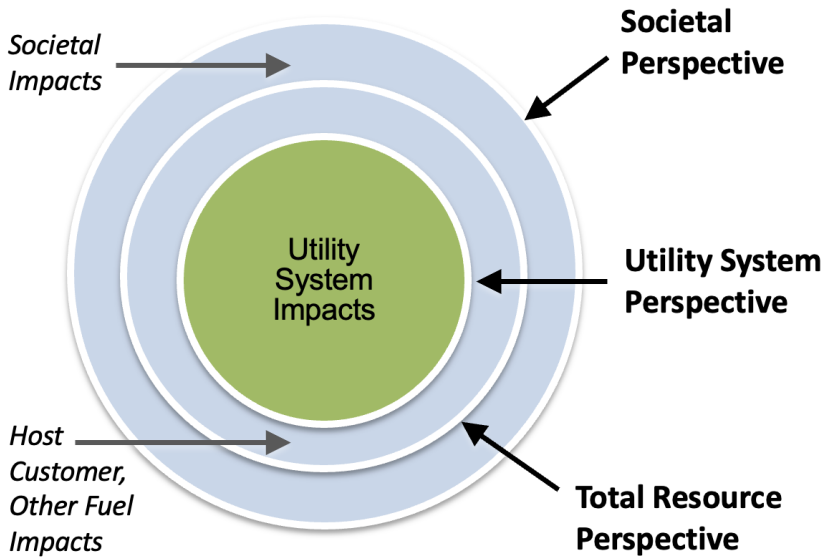
NSPM Multi-Step Process
for Developing a Primary BCA Test and Addressing Key Parameters

- Expanded from NSPM 2020 version based on process typically used in applying the NSPM in states.
- Applies BCA principles throughout the process…

Step 1	**Take inventory of applicable energy policy goals and regulatory decisions**
Step 2	**Review and account for relevant and material utility system impacts**
Step 3	**Decide which non-utility system impacts to include in the primary test**
Step 4	**Develop any secondary BCA tests**
Step 5	**Select a discount rate(s) for calculating the present value of investments**
Step 6	**Establish assessment level at which BCA results will inform decisions**
Step 7	**Consider conducting complementary analyses to BCAs**
Step 8	**Document process, comments, and rationale for above steps**

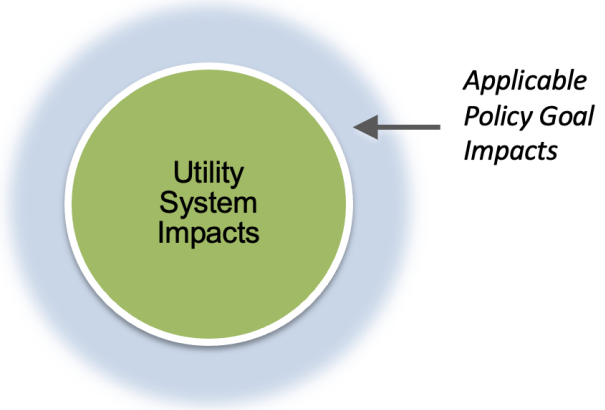
NSPM Regulatory/Policy Perspective

Traditional Perspectives



- Three perspectives define the scope of impacts to include in the most common traditional cost-effectiveness tests.
  - Utility Cost Test
  - Total Resource Cost Test
  - Societal Cost Test

Regulatory / Policy Perspective



- Perspective of Public Utility Commissions, State Energy Offices, legislators, muni/coop boards, public power authorities, other decision-makers.
- Accounts for utility system plus impacts relevant to a jurisdiction's applicable policy goals (which may or may not include host customer impacts).
- Can align with one of the traditional test perspectives, but not necessarily.
  - NSPM → Jurisdiction-Specific Test (JST)

Jurisdiction Specific Test (JST)
and Traditional Cost Tests

Test	Perspective	Key Question Answered	Impacts Accounted For
Jurisdiction-Specific Test	Regulators or decision-makers	Will the cost of meeting utility system needs, *while achieving applicable policy goals,* be reduced?	Includes the benefits and costs experienced by the utility system, and other impacts (other fuels, host customer, and/or societal) associated with achieving applicable policy goals (where relevant)
Utility Cost Test	The utility system	Will utility system costs be reduced?	Includes the benefits and costs experienced by the utility system
Total Resource Cost Test	The utility system plus participating customers	Will utility system costs plus program participants' costs be reduced?	Includes the benefits and costs experienced by the utility system, plus benefits and costs to program participants
Societal Cost Test	Society as a whole	Will total costs to society be reduced?	Includes the benefits and costs experienced by society as a whole
Participant Cost Test	Customers who participate in a program	Will program participants' costs be reduced?	Includes the benefits and costs experienced by the customers who participate in the program
Rate Impact Measure Test	Impact on rates paid by all customers	Will utility rates be reduced?	Includes the benefits and costs that will affect utility rates, including utility system benefits and costs plus lost revenues

DER Benefits and Costs

Electric Utility System Impacts:

- Impact may or may not be applicable or material for certain DER types or use cases
- 2026 Edition updates some of the characterizations of impacts
- Some impacts may be embedded in others
- Table is illustrative and characterizations may change as grid evolves…

Potential Benefits and Costs: Electric Utility System

Category	Utility System Impact	EE	DR	DG	DS	ELEC
Generation	Energy Generation	●	●	●	●	●
	Capacity	●	●	●	●	●
	Environmental Compliance	●	●	●	●	●
	RPS/CES Compliance	●	NM	NR	●	●
	Market Price Effects	●	●	NR	●	●
	Ancillary Services	NM	NM	NM	●	NM
Transmission	Transmission Capacity	●	●	●	●	●
	Transmission System Losses	●	●	●	●	●
Distribution	Distribution Capacity	●	●	●	●	●
	Distribution System Losses	●	●	●	●	●
	Distribution O&M	●	●	●	●	●
Cross-cutting GT&D	Risk	●	●	●	●	●
	Reliability	●	●	●	●	●
	Resilience	NR	NR	NM	NM	NM
General	Financial Incentives	●	●	●	●	●
	Utility Direct Investments	NR	NR	●	●	NR
	Program Administration Costs	●	●	●	●	●
	Utility Performance Incentives	● / NR	● / NR	● / NR	● / NR	● / NR
	Credit and Collection Costs	●	●	●	●	●

● = *typically a benefit for DER type;* ● = *typically a cost for DER type;* ● = *either a benefit or cost for DER type, depending upon the application of the DER; NM = typically not material; NR = not relevant for DER type.*

DER Benefits and Costs cont.

Natural Gas Utility System Impacts:

- Impact may or may not be applicable or material for certain DER types or use cases
- 2026 Edition updates some of the characterizations of impacts
- Some impacts may be embedded in others
- Table is illustrative and characterizations may change as grid evolves…

Potential Benefits and Costs: Natural Gas Utility System

Type	Utility System Impact	Gas EE	Gas DR	Gas DG	Gas DS	ELEC
Energy/Supply	Gas Commodity	●	●	NR	NR	●
	Capacity	●	●	NR	NR	●
	Environmental Compliance	●	NM	NR	NR	●
	Market Price Effects	●	NM	NR	NR	●
Transportation	Pipeline Capacity	●	●	NR	NR	●
	Pipeline Losses	●	●	NR	NR	●
Distribution	Local Delivery Capacity	●	●	NR	NR	●
	Local Delivery Losses	●	●	NR	NR	●
Cross-cutting Energy, T&D	Risk	●	●	NR	NR	●
	Reliability	●	●	NR	NR	●
	Resilience	NR	NR	NR	NR	NR
General	Financial Incentives	●	●	NR	NR	●
	Program Administration Costs	●	●	NR	NR	●
	Utility Performance Incentives	● / NR	● / NR	NR	NR	● / NR
	Credit and Collection Costs	●	●	NR	NR	●

● = typically a benefit for DER type; ● = typically a cost for DER type; ● = either a benefit or cost for DER type, depending upon the application of the DER; NM = typically not material; NR = not relevant for DER type.

DER Benefits and Costs cont.

Other Fuels, Host Customer and Societal Impacts:

- Impact may or may not be applicable or material for certain DER types or use case
- 2026 Edition updates some of the characterizations of impacts
- Some impacts may be embedded in others
- Table is illustrative and characterizations may change as grid evolves…

Potential Benefits and Costs: Other Fuel Systems

Type	Other Fuel System Impact	EE	DR	DG	DS	ELEC
Other Fuels (oil, propane, wood, gasoline)	Commodity	●	●	●	NR	●
	Environmental Compliance	●	●	●	NR	●
	Market Price Effects	●	NM	NM	NR	●

Potential Benefits and Costs: Host Customers

Type	Host Customer Impact	EE	DR	DG	DS	ELEC
Host Customer	Host portion of DER costs	●	●	●	●	●
	Host transaction costs	●	●	●	●	●
	Interconnection fees	NR	NR	●	●	NR
	Tax Incentives	●	NR	●	●	●
	Resilience	●	NR	●	●	NR
	Host Customer NEIs	●	●	●	●	●

Potential Benefits and Costs: Societal

Type	Societal Impact	EE	DR	DG	DS	ELEC
Societal	GHG Emissions	●	●	●	●	●
	Other Environmental	●	●	●	●	●
	Public Health	●	●	●	●	●
	Resilience	●	NR	●	●	NR

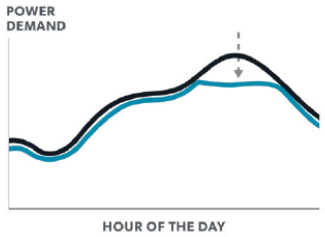
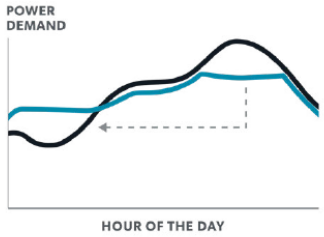
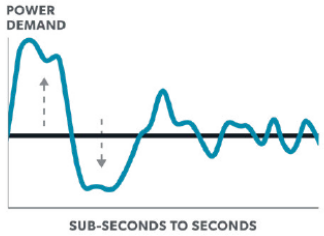
● = typically a benefit for DER type; ● = typically a cost for DER type; ● = either a benefit or cost for DER type, depending upon the application of the DER; NM = typically not material ; NR = not relevant for DER type.

Accounting for Demand Flexibility in BCAs

DERs can provide demand flexibility by making the system more reliable, stable, resilient, and efficient by providing the **ability to shed, shift, and/or modulate load to support grid needs**, particularly during peak periods.

DER benefits or costs associated with demand flexibility primarily affect **the magnitude of utility system impacts** e.g., generation capacity, ancillary services, transmission, and distribution costs, system risk and reliability. They are not a discrete line item in a BCA test.

Demand flexibility can **have both short- and long-term impacts** on generation and T&D capacity and operations and can provide 'optionality' to address risk-related impacts over the long term.

	LOAD IMPACT	EXAMPLE MEASURE	EXAMPLE BENEFIT
Shed Load		Building dims lighting system by a preset amount in response to grid signals while maintaining occupant visual comfort levels	Reduced investment in generation and transmission capacity due to lower peak demand
Shift Load		Connected water heaters pre-heat water during off-peak periods in response to grid signals	Reduced energy costs due to shifting consumption to cheaper hours of the day; avoided curtailment of renewables during off-peak periods
Modulate		Batteries and inverters autonomously modulate power draw to help maintain grid frequency or control system voltage	Reduced ancillary services costs, improved integration of variable generation resources (e.g., wind, solar)

Reliability and Resilience in BCAs

- NSPM provides **categorizations and definitions** of resilience and reliability for the purpose of BCAs…

Reliability focuses on preventing or avoiding routine short-term outages under normal operating conditions due to fluctuating load and generation, fuel availability, and/or outage of assets (e.g., equipment failure).

DER reliability impacts in BCA apply *only to the utility system,* (i.e., grid reliability), and typically not to host customers or society (otherwise likely to double-count reliability and resilience impacts)

Resilience is generally defined as the ability to prepare for threats and hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions (due to high-impact, unpredictable and infrequent events). Focuses on how to better enable *restoration of power once an outage occurs*, regardless of the duration of the outage.

DER resilience impacts in BCA largely flow to host customers and/or society, while grid resilience investments typically focus on grid hardening, vegetation management, undergrounding wires, etc.

Relevance and Materiality of Reliability and Resilience for Different DER Types

(Illustrative – may differ depending on specific use cases)

Impact	Category	EE	DR	DG	DS	ELEC
Reliability	Electric Utility System	●	●	●	●	●
	Gas Utility System	●	●	NR	NR	●
Resilience	Electric Utility System	NR	NR	NM	NM	NM
	Gas Utility System	NR	NR	NR	NR	NM
	Host Customer	●	NR	●	●	NR
	Societal	●	NR	●	●	NR

● = typically a benefit for this DER type; ● = typically a cost for this DER type; ● = either a benefit or cost for this DER type, depending upon the application of DER; NM = typically not material; NR = not relevant for this DER type.

Accounting for Uncertainty and Risk in BCAs

Defining Uncertainty and Risk

In the context of planning, *uncertainty* is defined as the situation where the 'correct' or 'exact' value of a parameter is unknown or cannot be known (EPRI 2015a).

In the context of planning, *risk* is defined as an adverse outcome that can result from uncertainty. In statistical terms, risk is the expected value of a potential loss (Ceres 2012).

Risk is defined by the relationship:

*Risk = probability of the adverse outcome occurring * the consequence of the outcome*

Method	Assumptions Required
Sensitivity analysis	Alternative estimates of an uncertain BCA input or inputs
Scenario analysis	Alternative estimates of multiple related uncertain BCA inputs
Expected value analysis	Alternative estimates and probabilities of uncertain BCA inputs
Direct estimate	The probability and cost of an undesirable outcome associated with a BCA input
Hedge value	The value of a market hedge equivalent to the risk benefit of the BCA input
Risk adder	A proxy value approximating the degree to which a DER increases or decreases a risk
Risk-adjusted discount rates	A market proxy for a low-risk (or high-risk) investment

Analyzing Specific DER Scenarios

Specific Scenarios Addressed in NSPM:

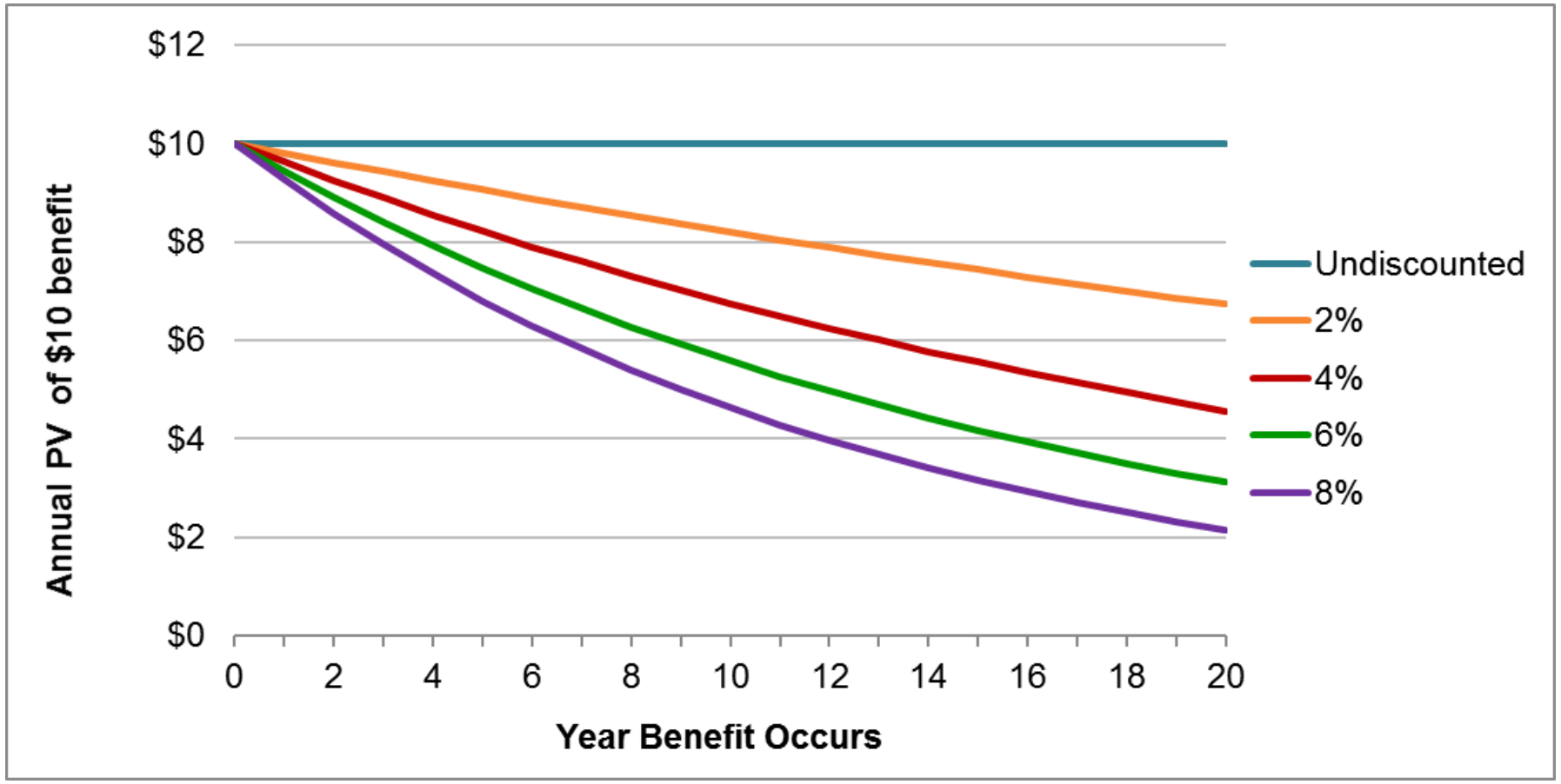
- Multiple On-Site DERs
- Non-Infrastructure DER Solutions
- Virtual Power Plants (VPPs)
- Microgrids

BCA Considerations:

1. Passive interactive load impacts between DERs
2. Active interactions, use case, and balancing competing priorities
3. Unlocking novel value streams and threshold dependent value quantifications
4. Accounting for uncertainty when avoiding tangible grid investments and/or performing as grid assets
5. Assessing the value of flexibility
6. Time-dependent value quantification
7. Location-dependent value quantification
8. Supporting system costs
9. Existing DER impacts

Discount Rates in BCAs

Discount rates have a large impact on the BCA results.
Especially over the long term.

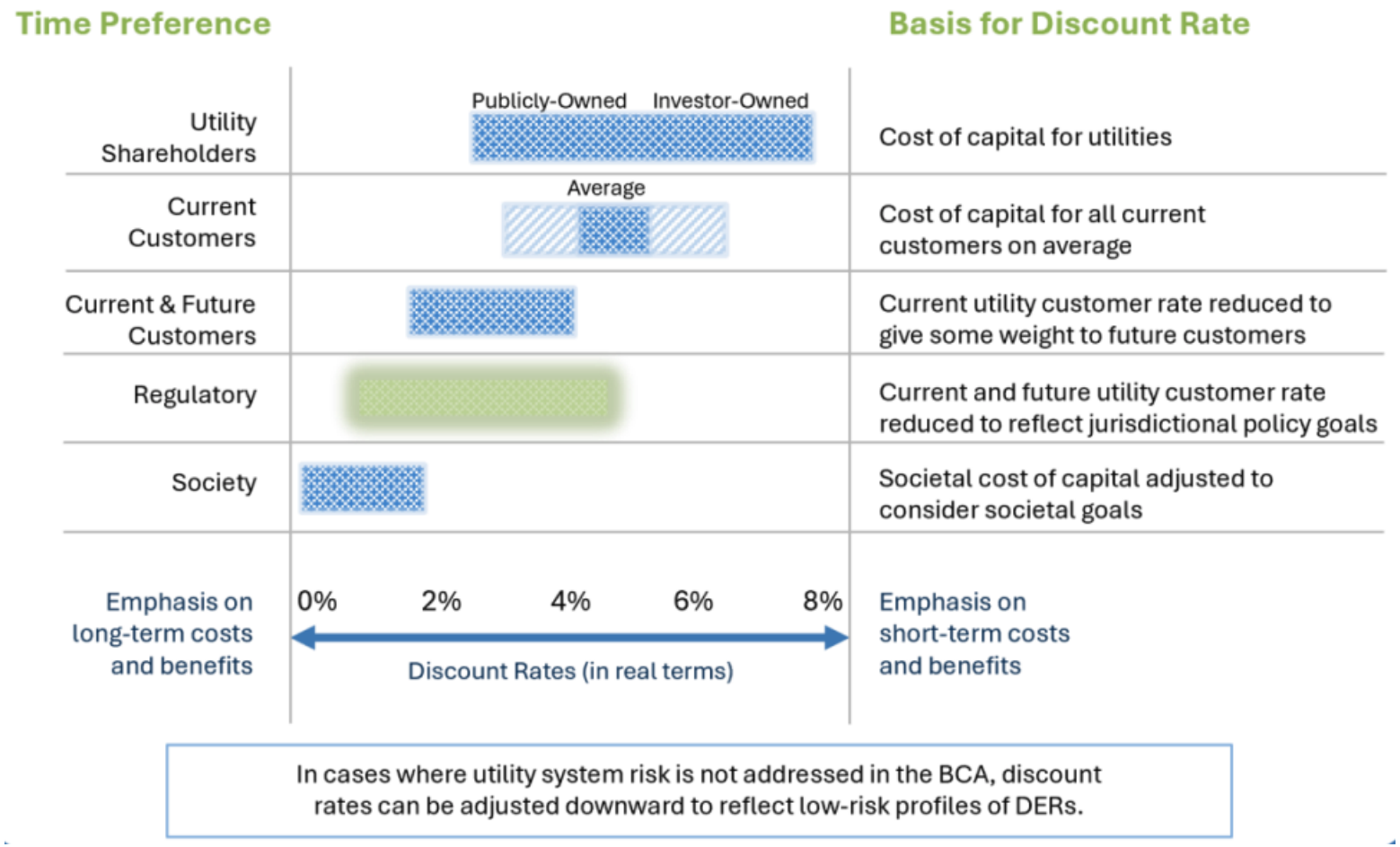


The blue line shows the costs (or benefits) per year without any discounting.

The other lines show the discounted costs (or benefits) per year, at the rates shown.

At an 8% discount the costs (or benefits) in year 20 are only 20% of the undiscounted costs.

NSPM Guidance on Selecting a Discount Rate



Determining the Discount Rate for the JST:

1. Establish that the selection of the JST discount rate will align with the regulatory perspective and a corresponding time preference.
2. Consider the time preference of current utility customers.
3. Consider how much weight to give future versus current customers.
4. Consider how other policy goals should affect the regulatory time preference.
5. Consider whether other BCA assumptions have adequately accounted for risk.

Methods for Calculating Impacts

- NSPM chapter provides *general* guidance on steps to calculating monetary impacts of DERs, and other approaches to accounting for impacts
- Refers to extensive guidance available in NSPM companion resource: *Methods, Tools, and Resources for Quantifying DER Impacts Handbook*

Approach	Description
Monetary values	Rigorous jurisdiction-specific studies offer the most accurate approach for estimating and monetizing relevant DER impacts.
Values from other jurisdictions	If jurisdiction-specific studies are not available for a relevant and material DER impact, studies from other jurisdictions or regions can be used for determining the impact, where appropriate.
Proxy values	If monetized values for a relevant and material DER impact are not available, well-informed and well-designed proxies can be used as a simple, approximate substitute.
Quantitative metrics	If monetary values for a relevant and material DER impact are not available, quantitative metrics can be used to assess specific outcomes, e.g., number of units installed, number or percentage of customers served, or tons of emissions reduced.
Qualitative information	If monetary values or quantitative metrics for a relevant and material DER impact are not available, qualitative information can be used to generally describe the impact.
Alternative thresholds	If a relevant and material DER impact is especially challenging to address with either monetary, quantitative, or qualitative approaches, alternative BCR thresholds (i.e., other than 1.0), can be used as a simple, approximate way to account for it.

NSPM Supporting Resources and Tools

OpenBCA Tool – Coming this Summer!

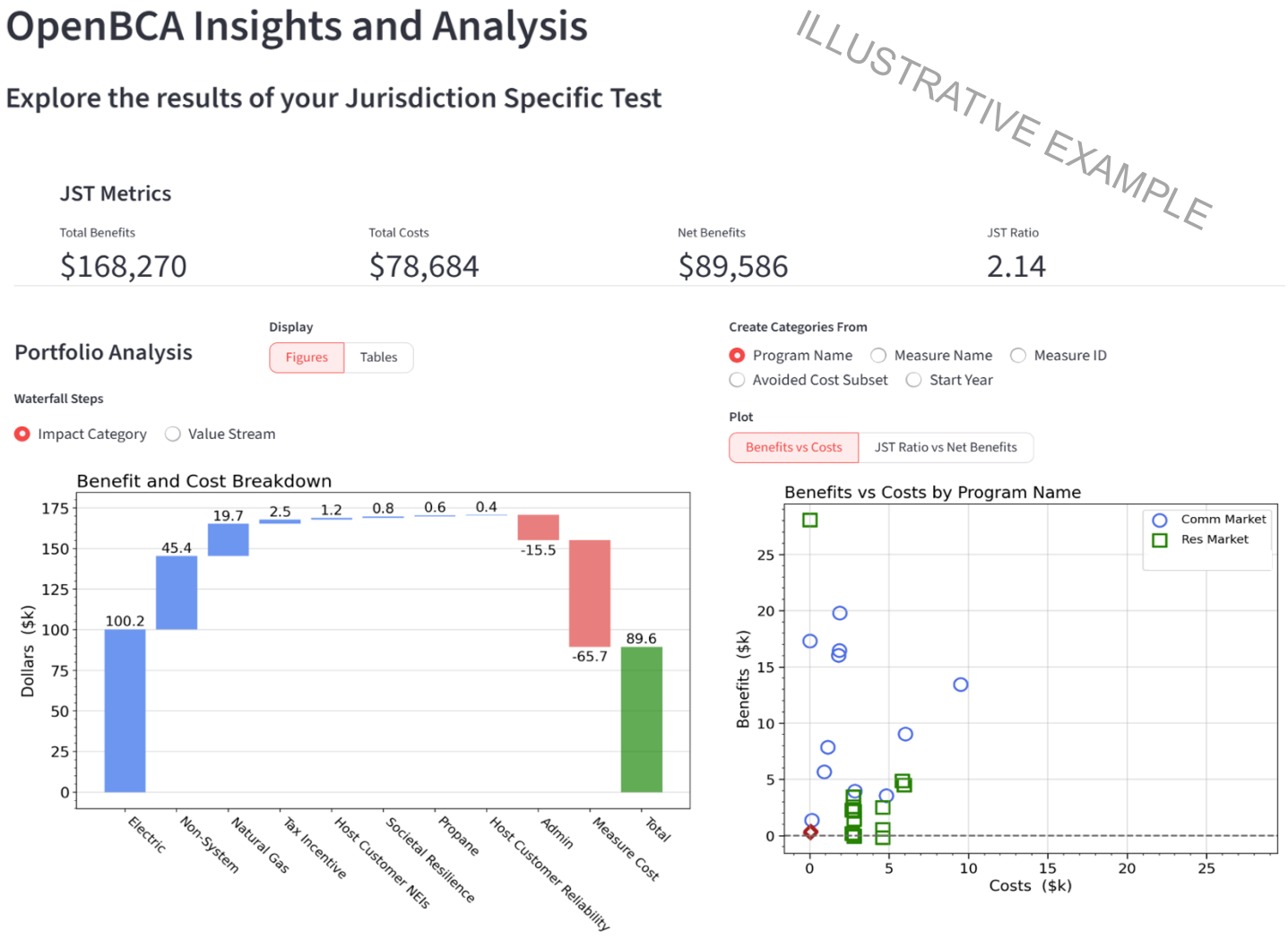
Open-source modeling tool will support state efforts to:

- Conduct comprehensive and consistent BCA of single or multiple DERs using a standardized and transparent platform to improve decision making for regulators, policy makers and energy planners.
- Evaluate a customized **Jurisdiction-Specific Test** based on selection of relevant value streams that align with policy goals (with ability to compare to secondary tests or traditional cost-effectiveness tests)

OpenBCA designed to align with NSPM and methodologies provided in NESP *MTR Handbook*.

Supporting Resources

- OpenBCA tutorials
- Regular 'office hours'
- State technical assistance



For more information, see naseo.org/nesp/openbca-tool

NSPM Training and Certification

- **Upcoming Training:**
  - NSPM Certified™ in-person training
    - NSPM on-line primer course if needed
  - NSPM general BCA on-line training
  - BCA deep dive topics on-line training
  - On-demand recordings of on-line trainings
  - CEU/PDH credits and NSPM Certification - in development

- **Primary audience:**
  - Staff at State Energy Offices, Public Utility Commissions, Consumer Advocates, other agencies
  - Utilities, municipal coops and public authorities
  - Evaluators/practitioners
  - Other interest parties

Stay tuned for training opportunities starting late Summer!

Thank You!

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